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[54] DATA PROCESSING APPARATUS HAVING SIMPLIFIED ICON DISPLAY

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[56] References Cited

U.S. PATENT DOCUMENTS

4,686,522	8/1987	Hernandez et al 340/721
4,720,703	1/1988	Schnarel et al 340/721
4,763,356	8/1988	Day et al 178/18
4,764,885	8/1988	Greanias et al 340/708
4,899,136	2/1990	Beard et al 340/706
4,987,411	1/1991	Ishigami 340/709
5,040,131	8/1991	Torres 345/156

FOREIGN PATENT DOCUMENTS

2193827 2/1988 United Kingdom .

OTHER PUBLICATIONS

Macintosh System Software User's Guide, Version 6.0—Apple, 1988.

Patent Abstracts of Japan, vol. 12, No. 138, Apr. 27, 1988, Shigeki Iguchi, "Data Managing Device".

IEEE Computer Graphics and Applications, vol. 8, No. 5, Sep. 1988, pp. 65-84; Brad A. Myers, "A Taxonomy of Window Manager User Interfaces".

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[57] ABSTRACT

A data processing apparatus is provided, in which an information is inputted by using a pen from a display portion in which an input device (tablet) is stuck to a display device (display panel). If the user touches an icon displayed on this display portion for indicating various functions with a point of the pen and drags the pen along the surface of the display portion to a display position and releases the point of the pen from the panel surface of the display portion, an enlarged processing display form (i.e. window) is automatically displayed at a desired position of the display portion. Further, if the user touches the window with the point of the pen and drags the pen along the panel surface of the display portion up to the position of a desired icon, the enlarged window is automatically reduced and is stored in a vacant icon.

7 Claims, 6 Drawing Sheets

